

# ***THE B&O MODELER***

Volume 6, Number 2

March/April 2010



## **BUILDING NKP CAR'S B&O F-4BN DINING CAR NA TOWER, NOT YOUR NORMAL TOWER**

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**Cover Photos – Top, B&O F-4ce Dining Car #1060– Bob Chapman photo. Bottom, NA Tower, Jeff Hanke photo.**

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## **AN INVITATION TO JOIN THE B&O RAILROAD HISTORICAL SOCIETY**

The Baltimore and Ohio Railroad Historical Society is an independent non-profit educational corporation. The Society's purpose is to foster interest, research, preservation, and the distribution of information concerning the B&O. Its membership is spread throughout the United States and numerous foreign countries, and its scope includes all facets of the B&O's history. Currently the Society has over 1600 registered members.

Members regularly receive a variety of publications offering news, comments, technical information, and in-depth coverage of the B&O and its related companies. Since 1979, the Society has published a quarterly magazine, *The Sentinel*, dedicated to the publication of articles and news items of historical significance. Other Society publications include monographs, calendars, equipment rosters, and reprints of original B&O source material. Their

purpose is to make otherwise unobtainable data available to the membership at reasonable cost.

Membership in the Society is a vote of support and makes all of the Society's work possible. It provides those interested in the B&O with a legitimate, respected voice in the railroad and historical communities. By working together, B&O fans are able to accomplish much more than by individual efforts. No matter how diverse your interests or how arcane your specialty, others share your fascination with America's most historic railroad. We invite your participation. Several classes of annual memberships are available, Regular memberships are only \$35.00. If you would like to join, visit the website, <http://borhs.org/Membership/membership.html> to fill out a membership application, print a copy and mail it to:

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P.O. Box 24068  
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# BUILDING NKP CAR'S B&O F-4BN DINING CAR: REVIEW AND CONSTRUCTION TIPS

BY: BOB CHAPMAN

PHOTOS BY AUTHORS UNLESS OTHERWISE SPECIFIED.



HO scale model of B&O F-4ce dining car #1060, built from NKP Car's F-4bn kit.

## The Prototype

Between 1923 and 1930, the B&O upgraded its dining car fleet with new all-steel class F-4b Colonial-series dining cars constructed by Pullman Company. Seating 36 and named for prominent Colonial women, the cars featured exquisitely appointed interiors and were assigned to B&O's premier passenger trains. A comprehensive history of these cars by Mark Stewart appears in the 4<sup>th</sup> Quarter 2009 issue of *The Sentinel*.

Soon to follow from Pullman in 1924-25 was the F-4c class. Dimensionally, mechanically, and functionally identical to the F-4b's, these cars were less fancy in interior décor for assignment to B&O's secondary trains.

As the years progressed, the cars in both classes received various modifications. Some were modernized with skirting and streamlined roofs for service in the *Royal Blue*, *Capitol Limited*, *National Limited*, and *Columbian* consists, others received turtleback roofs, and most received Thermopane windows. (A *turtleback roof* is a modified clerestory roof with steel added to allow it to appear similar to the roof of a streamlined car. Ed.) With accompanying mechanical and interior upgrades, the F-4b's and F-4c's ended being assigned into at least nine different subclasses.

Since it seems that no two cars were alike, B&O modelers are well advised to refer to a B&O diagram and where possible a photo of both sides of the specific car to be modeled. An incomplete list of published photos follows (abbreviations: k=kitchen side, a=aisle side, b=both sides):

F-4b #1036 (k), *The Sentinel*, Q4/09  
F-4bc #1035 (a), *The Sentinel*, Q4/09  
F-4c #1049 (b), *The Sentinel*, Q4/09  
F-4c #1049 (b), *The Sentinel*, 9/93  
F-4c #1049 (a), *The Sentinel*, 11/85  
F-4b #1044 (a), *The Sentinel*, 7/84  
F-4bm #1036 (b), *B&O Salute*, Davis & Roberts  
F-4ce #1060 (b), *B&O Salute*, Davis & Roberts  
F-4bc #1035 (a), *B&O Color Guide*, Bossler  
F-4bm #1036 (k), *B&O Color Guide*, Bossler  
F-4cc #1077 (k), *B&O Color Guide*, Bossler  
F-4cc #1078 (k), *B&O Passenger Service*, Vol. 1, Stegmaier  
F-4bb #1045 (k), *B&O Passenger Service*, Vol. 2, Stegmaier

B&O diagrams for each subclass appear in *Diagrams of Passenger Equipment*, B&O Railroad (TLC Publishing), and a B&O 1/8" scale plan for class F-4bm appears in *Scale Modeling and the Baltimore & Ohio Railroad* by Dornette.



NOS 1055 TO 1057, 1059, 1063 AND 1065 TO 1068

F-4BN

Built by Pullman Co. as Class F-4s as follows:

No. 1055 in 1925.  
Nos. 1056, 1057 and 1059 in 1926.  
Nos. 1063 and 1065 in 1927.  
Nos. 1066 to 1068 in 1930.

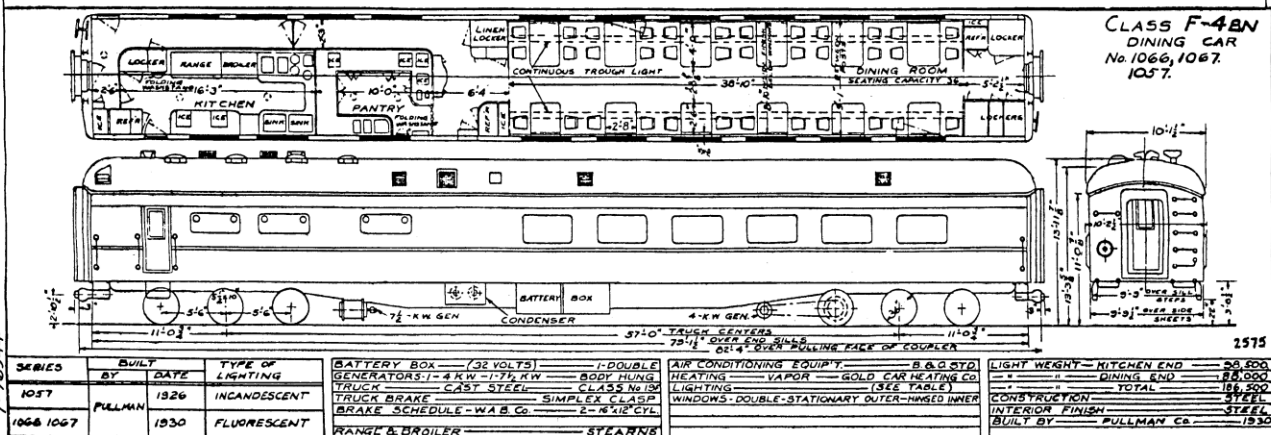
Changes in minor details and reclassified F-4sm in 1944-46.

Changes in minor details and reclassified F-4sn in 1953-57.

No. 1068 with rearranged seating, changes in minor details, reclassified F-8 and renumbered 1084 in 1954.

All others remaining in last report, 1960.

FROM THE ARCHIVES OF THE



B&ORR diagram of F-4bn dining car. B&ORR Historical Society Collection.



F-4bn dining car. B&ORR Historical Society Collection.



F-4bn dining car. B&ORR Historical Society Collection.



F-4bn dining car. B&ORR Historical Society Collection.



F-4bn dining car. B&ORR Historical Society Collection.



F-4bn dining car. B&ORR Historical Society Collection.



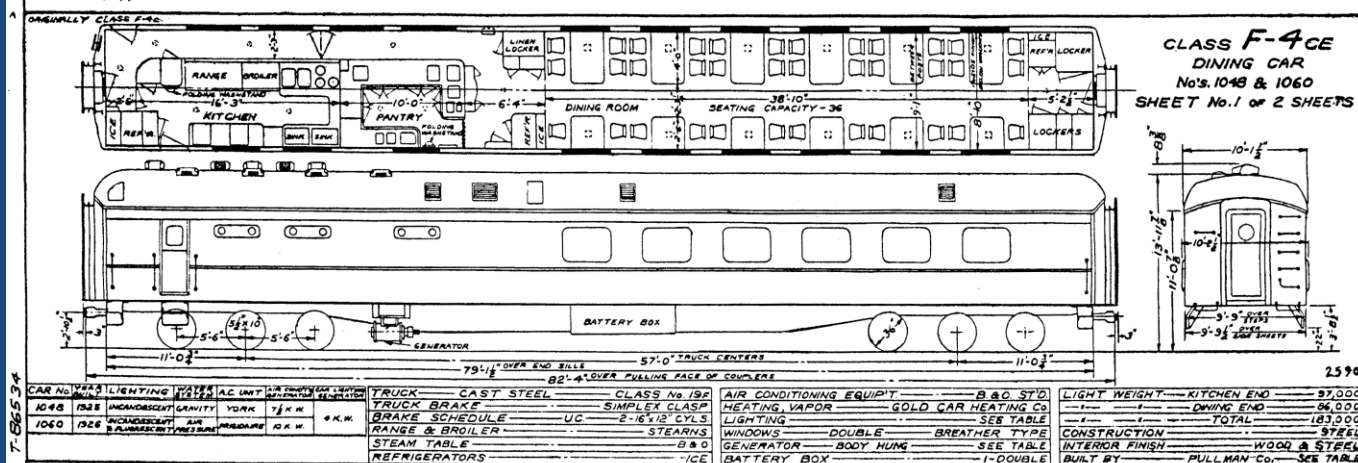
F-4CE

FROM THE ARCHIVES OF THE



All remaining in last report, 1960:

2-8-57-A



B&ORR diagram of F-4ce dining car. B&ORR Historical Society Collection.



F-4ce dining car. B&ORR Historical Society Collection.



F-4ce dining car. B&ORR Historical Society Collection.



F-4ce dining car. B&ORR Historical Society Collection.



F-4ce dining car. B&ORR Historical Society Collection.





F-4ce dining car. B&ORR Historical Society Collection.



F-4ce dining car. B&ORR Historical Society Collection.



F-4ce dining car. B&ORR Historical Society Collection.





F-4ce dining car. B&ORR Historical Society Collection.



F-4ce dining car. B&ORR Historical Society Collection.



Completed model, aisle side.

## NKP Car's HO Scale Kits

NKP Car (NKPCarCo.com) offers two versions of B&O's F-4 dining cars – a class F-4bm with clerestory roof, and a class F-4bn with turtleback roof.

A review of B&O diagrams suggests that the two kits will accurately model nearly any of the B&O's F-4b and F-4c dining car subclasses which have been upgraded with Thermopane windows. For example, the F-4bn will also model class F-4ce, and by replacing the roof with a high-arch streamline-profile roof such as Bethlehem Car Works #40, classes F-4ba, F-4bb, F-4bc, F-4cd, and F-8 can be modeled. The addition of skirting will model class F-4cc. (For tips on adding a streamline roof or skirting, see *The B&O Modeler*, January/February 2009, "Modeling B&O's Class A-18cd Modernized Coach".)

Inside NKP Car's kit box are nearly all the parts needed to complete the diner model except paint, decals, and couplers. The sides are beautifully photoetched in brass, and are highly accurate both in dimensions and appearance. The roof and ends are cast in resin, and dimensionally match B&O diagrams. Roof vents, a very prominent dining car detail, are provided in the various styles needed, as is a photoetched roof hatch. Underbody detail includes cast resin parts for B&O's nearly unique York air conditioning system, basic UC brake system parts, a pair of generators, steam traps, and electrical receptacles. B&O diagrams and NKP Car's own underbody diagram indicate that B&O's dining cars were equipped with dual 16x12 brake cylinders; this second brake cylinder was the only significant detail part not supplied with the kit.

While the components of the kit are first rate, the instructions present a love-hate situation. On the positive side, the instruction packet includes prototype photos copied from *B&O Salute*, a full-size photo of the model roof with all vents properly positioned, a diagram of the sides suggesting placement of the styrene-strip bracing, and an

underbody diagram showing location of the underbody components.

The downside of the instructions occurs with the text, where the instructions for the dining car kits have been combined with instructions for NKP Car's D-14ab and D-15 combines. The cars do not have a lot in common, and I found myself having to cross out the half of the text irrelevant to the dining car project to keep myself from getting confused between the two car types.

An additional pair of pages covers generic construction steps involving sides, ends, and floor common to all NKP Car kits. Assembly required jumping back and forth between the two sets of instructions, and special concentration that you did not somehow omit an important step. In today's world of cut-and-paste word processing, there's little excuse for not having a single integrated set of instructions for each car type.

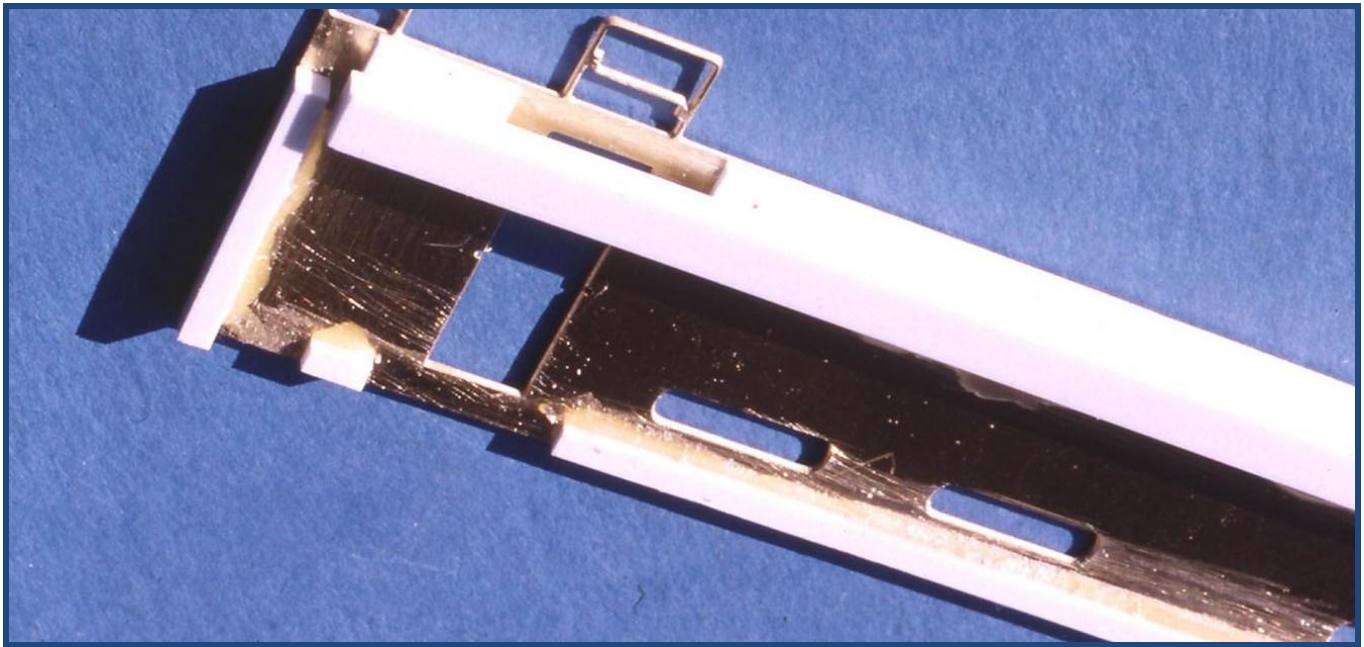
In the following paragraphs, we'll replace, re-sequence, augment, and sometimes revise NKP Car's instructions, with the goal of offering an integrated, well-organized, and prototypically correct procedure for building the kit.

### Framing the Sides

With a razor saw, cut apart the sides and doors; file smooth any remaining tabs. Drill #76 holes for handrails in the sides and doors, starting from the locator dimples etched into their backs. To simplify masking and minimize paint bleed, we'll install the doors and handrails after painting.

Dining car crews often ran with the Dutch doors open to provide ventilation to the kitchen, and it was not unusual to see a kitchen crew member standing in the doorway for a breath of fresh air. If you would like to model this option, cut away the top segment of the door.





Interior bracing of sides; note the cutouts to clear the kitchen door.

Glue .040" x .080" styrene strips to the back of each side flush with the top edge; this thickness gives a correct roof overhang. Leave gaps along the length for the later installation of the doors.

Using a flat surface such as a plate of glass, glue .100" x .156" styrene strip to .040" x .250" strip, aligning the top edges to form an L-shaped angle (see photo). Test fit the strips to the sides, and cut gaps in the .040" x .250" strip to allow clearance for the doors.

Wash the sides and angle strips with a non-oily liquid detergent such as Ivory Liquid to remove any traces of oil, and assure good glue adhesion. Glue the angle strips to the sides, flush with the bottom edge. If desired, further reinforce the glue joint with epoxy glue.

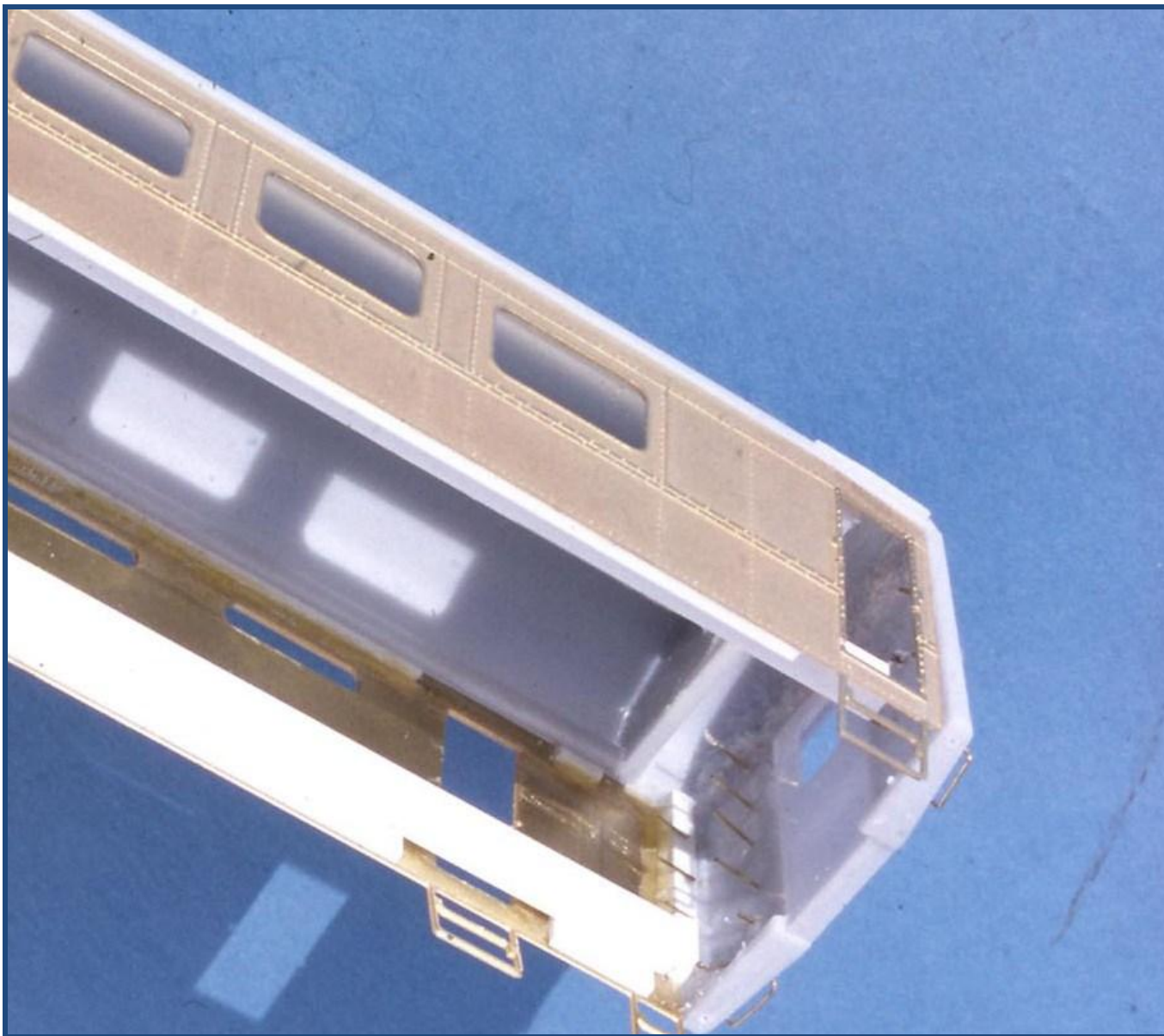
NKP Car's instructions suggest painting the sides now, but since the gray stripe wraps around the end castings, I have found it easier to paint the carbody as a complete unit after assembly.

### Detailing the Ends

On NKP Car's F-4bn model, the ends are cast integral with the roof. With a file, clean any flash from the casting; be sure to remove any resin bumps inside the angle where the sides will join the roof.

Test fit the sides to the roof/end casting. If the sides are too long, file a taper into the inside edge of each end casting; while doing this, file away the locator tabs inside each end. This filing operation will go quickly, so be sure to frequently check the fit of the sides into the roof/end casting. When you are satisfied with the fit, round the top corners of the sides so that they will nest snugly against the fillet between the roof and ends.

Glue the sides to the roof; tack them first, then run a bead of glue along the joint. Where the sides butt against the ends, glue a scrap of styrene (perhaps .040" x .040") to the inside corner to strengthen the joint. If desired, run a bead of epoxy glue along all the styrene-brass joints to further secure them. Re-drill the handrail holes as needed.



Assembled carbody; note vertical styrene strip to strengthen joint between side and end.

Using the photos as a guide, install a pair of Westerfield #1197 18" drop grabs at the bottom of each end, one on each side of the diaphragm opening; the hole for the outer leg of these grabs lines up with the vertical row of rivets.

On the right panel of the kitchen end of the car is a ladder of five straight grabs spaced 18" apart; note that the bottom rung of the ladder is L-shaped, and that the hole for its left end will be about 5" higher than its opposite hole. For the top four rungs, install Westerfield #1198 18" straight grabs. For the L-grab,

bend a Westerfield #1183 23" straight grab so that its left end forms an L with a 5" leg, and install it.

Install a pair of 23" grabs horizontally on the remaining three end panels. On the kitchen end the grabs are spaced 3'0" and 5'6" from the bottom of the end, and on the other end 3'6" and 5'6".

The left panel of the kitchen end features a brakewheel. Install a Precision Scale #31118 brakewheel onto a wire hub glued into a spacer block cut from a scrap of styrene; the brakewheel should be halfway between the two horizontal grabs.



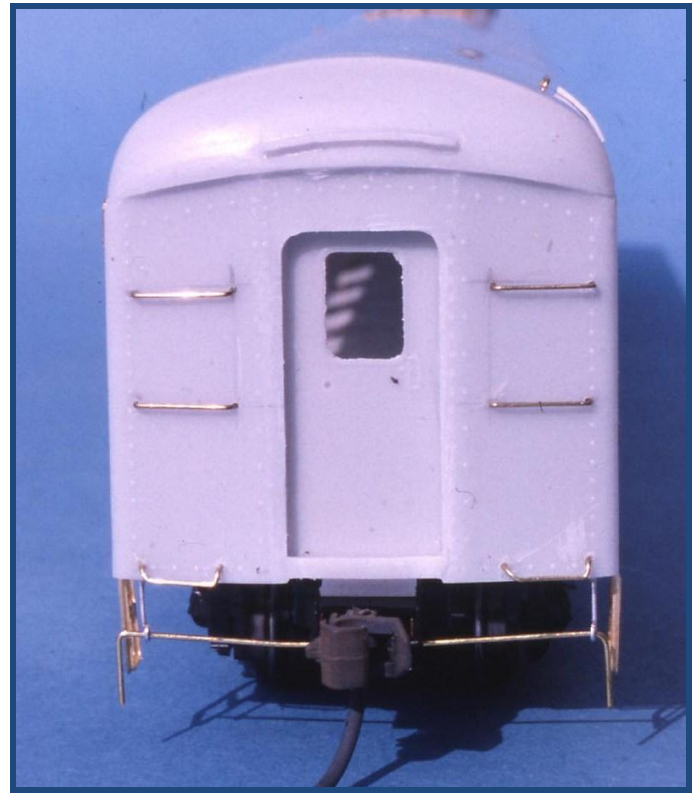


End detail, kitchen end.

To better match B&O's typical diaphragm, remove 6" from the tops of the Union Pacific-style diaphragms supplied by NKP Car. Cut away the diaphragm gates, since these would not be used with a non-vestibule car with lockable end doors. To provide a smooth surface for later gluing, shave the rivets from the area of the end where the diaphragms will be mounted. Set aside the diaphragms for installation after painting.

### **Detailing the Roof**

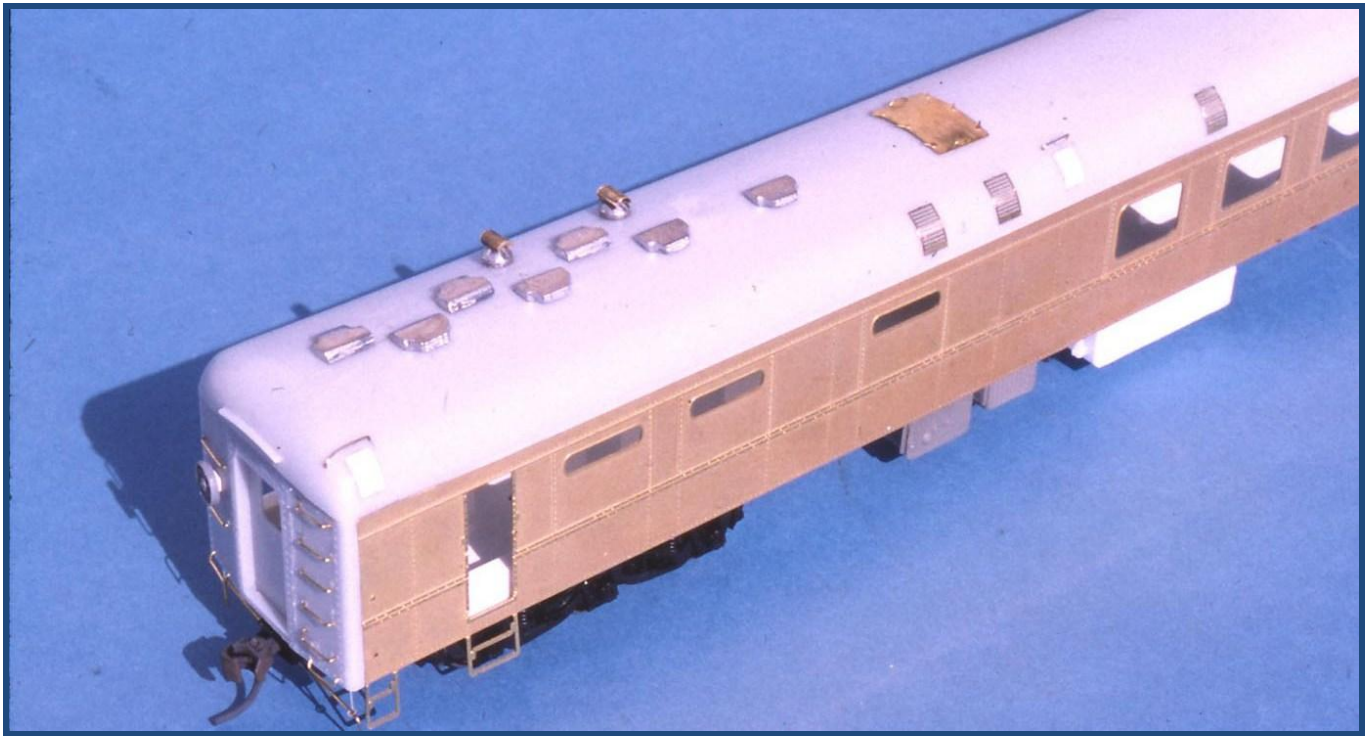
File away the drip edges from three corners of the roof, leaving in place the one over the door at the kitchen end.



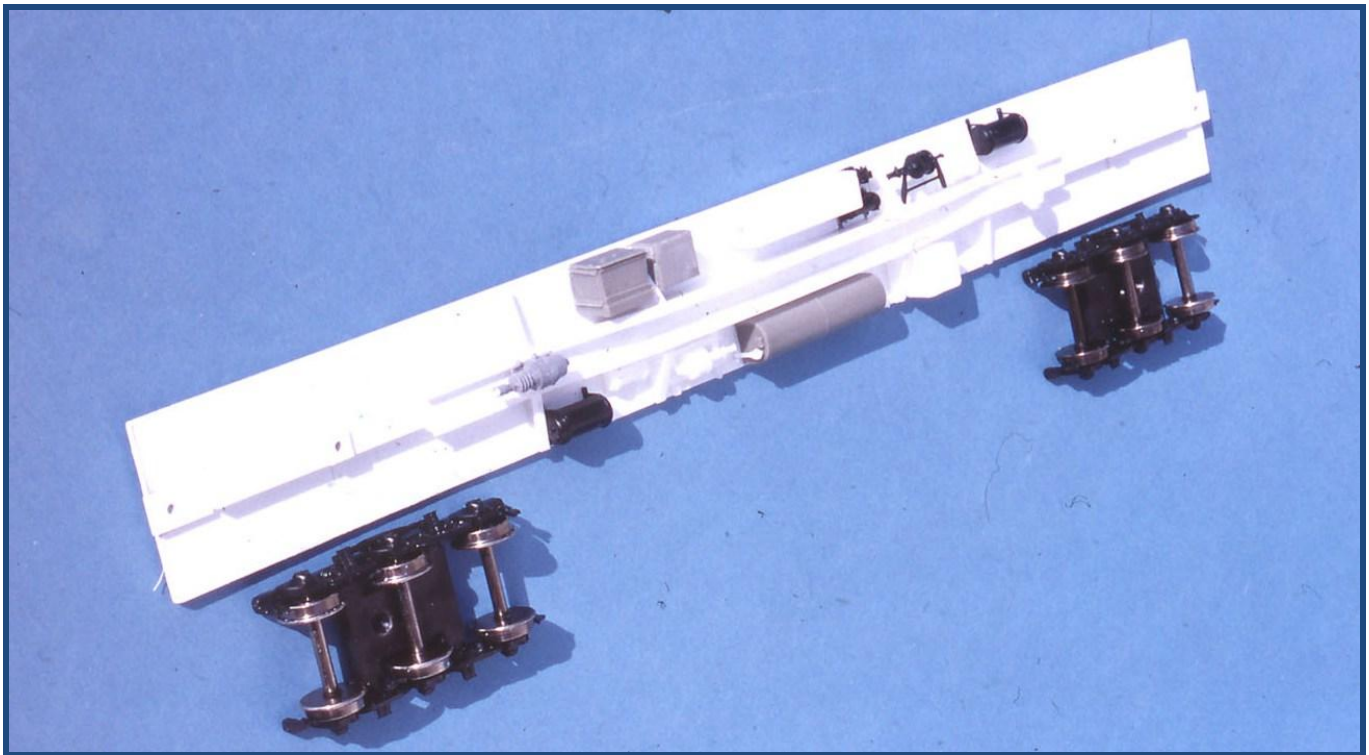
End detail, dining room end

Using NKP Car's roof photo diagram as a guide, install the roof vents, hatches, and grabs. NKP Car's kitchen stacks are noticeably taller than those visible in B&O prototype photos. I elected to replace them with chopped and modified Trackside Specialties #193 smokejacks; cut the stack pipe to a 6" stub, and add a horizontal top made from tubing (I used an 8" diameter piece of ballpoint pen ink tubing sliced in half lengthwise).

For the large brass hatch, form 10" grabs from .012" wire. Install an 18" straight grab above each ice hatch. The long curved grab above the ladder is a Westerfield 23" straight grab curved to fit.



Roof detail, kitchen end.



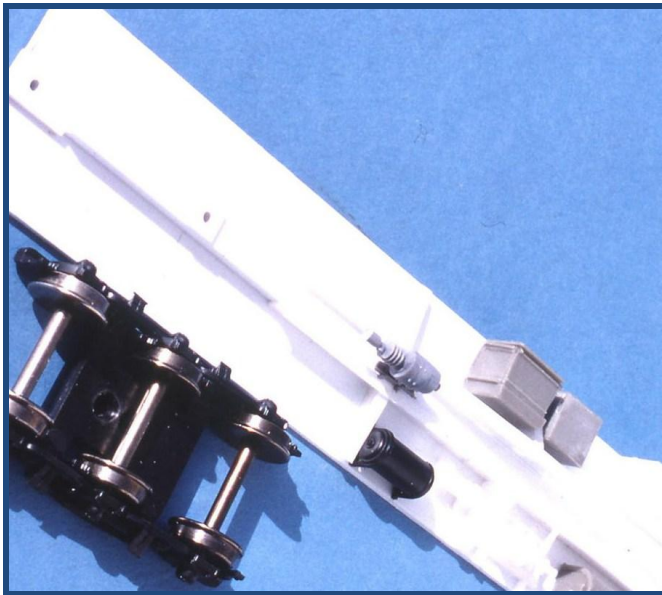
Underbody detail.

### Floor and Underbody

I prefer to substitute .060" styrene sheet for the extruded floor provided in the kit; it is sturdier, and in some cases the extruded centersill has been off-center. On my model, the dimensions of the floor were 8'9" x 78'10".

Cut coupler pads from .060" x .250" styrene strip 3'0" long; glue them to the floor extending 6" past the floor's end.





Underbody closeup, highlighting truck mounting pads and coupler pads.

Cut a centersill spacer beam from 1/8" x 3/16" styrene strip. The 1/4" channel supplied by NKP Car is unprototypically wide; heavyweight passenger car centersills were spaced at a maximum of 18", and often less. Glue the beam to the floor between the coupler pads, making sure it is perfectly centered. Locate the holes for the truck mounting screws. The trucks on the prototype are centered 57'0" apart, so the holes on the model should be spaced at 59'8" to allow for the offset mounting hole in the truck frames. Add a pad of .030" x .250" x .250" styrene centered at each truck mounting hole location; this pad will allow the trucks to flex over longitudinal variations in trackwork. Drill #50 holes in the pads for the truck screws.

With a razor saw cut the molded centersills from their sprues, and shorten them to 49'0" to clear the trucks. Glue them to the centersill spacer.

Glue two transverse crossmembers on each side of the centersill, where the centersill begins its taper. Add .010" x .080" flanges to the centersills and crossmembers.

Drill #50 holes and install coupler boxes on the coupler pads; the ends of the coupler boxes should be flush with the ends of the carbody, excluding diaphragms.

Since I was building my model as a F-4ce, I used the F-4ce underbody diagram supplied by NKP Car to locate the underbody components. The diagram appears to be a good match to available photos. If you are building one of the other subclasses, refer to photos of that subclass, or use NKP Car's F-4bn diagram.

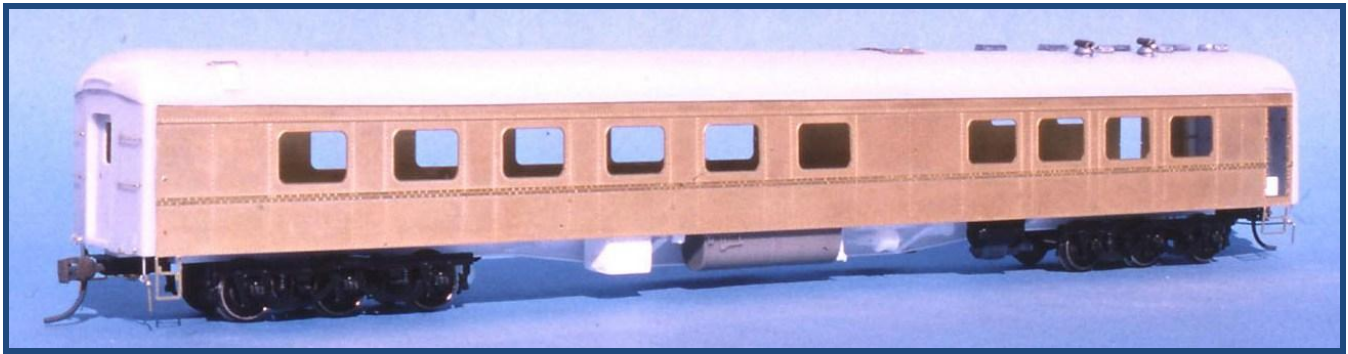
Note that both NKP Car diagrams show two 16" x 12" brake cylinders vs. the single cylinder common on most other heavyweight passenger cars. Since NKP Car only supplied one cylinder, I augmented the kit with a cylinder from Bethlehem Car Works #12 UC brake system set.

Assemble the Branchline trucks. Each truck contains 24 parts, and patience is required. A sharpened round toothpick is handy for reaming the locator holes for the brakeshoes. I omitted the end beams to improve rolling quality.

Before painting, wash the carbody and other major components with a non-oily liquid detergent such as Ivory Liquid.



Completed unpainted model, kitchen side.



Completed unpainted model, aisle side

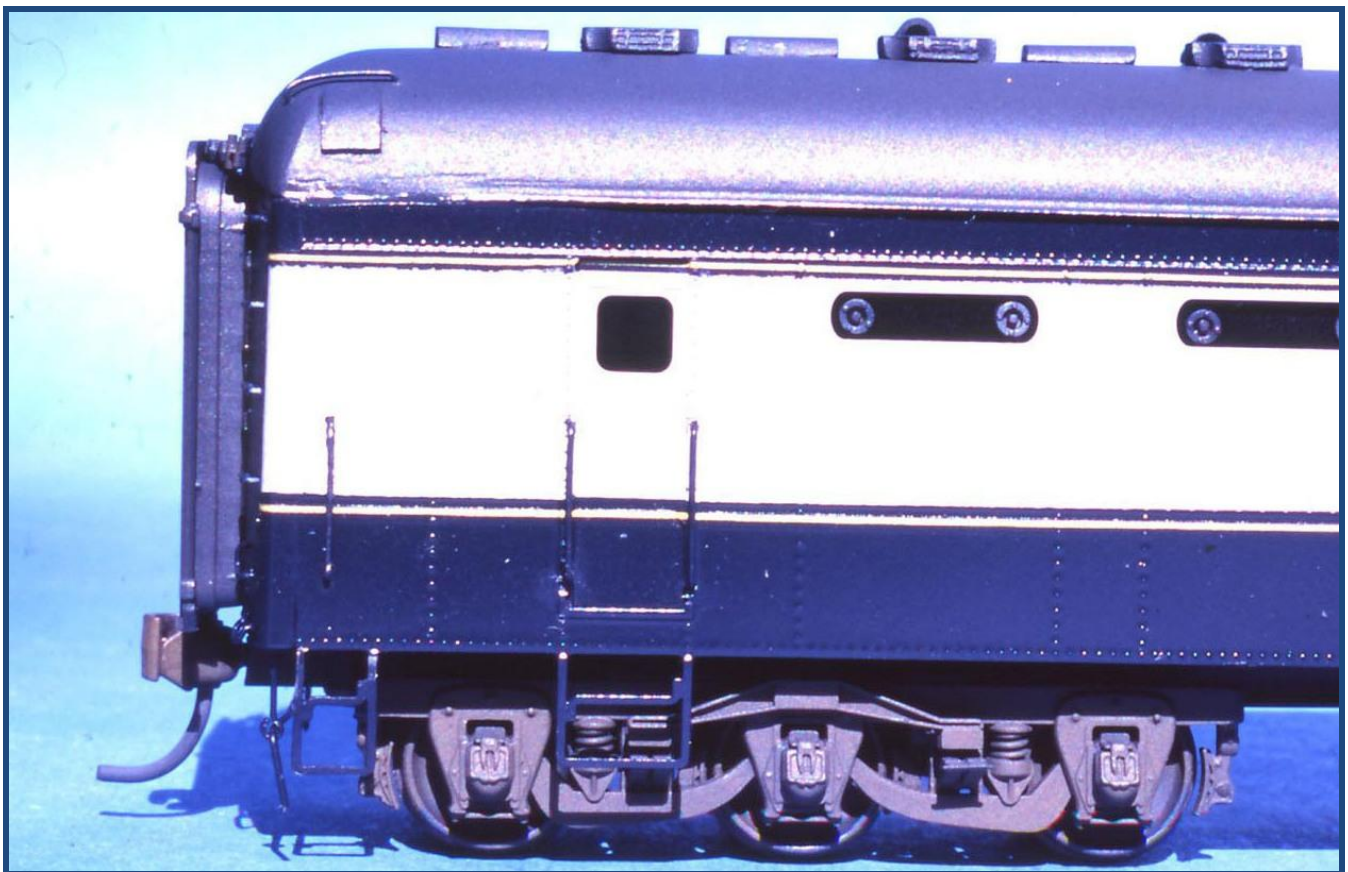
### **Painting, Lettering, and Final Details**

Paint the model. Dark green is correct until the late-1940s, when many of B&O's dining cars were repainted in the blue/gray scheme. See "Painting and Lettering B&O Passenger Car Models" in the July/August 2008 *B&O Modeler* for further discussion of B&O passenger car paint and techniques.

The gray window strip wraps around the ends by about 3". Test fit the doors against the masked carbody, then mask them separately to match the height of the striping on the carbody. Paint the trucks, floor, underbody, and diaphragms Grimy Black.

For striping and lettering, I used Champion decals; the roadname is slightly short vs. the prototype, a difference that I felt was not too important.

I numbered my F-4ce #1060; other F-4ce numbers are #1048 and 1053. Appropriate numbers for the F-4bn subclass are #1055, 1056, 1057, 1059, 1063, 1065, 1066, and 1067.



Kitchen end closeup; note window vents.

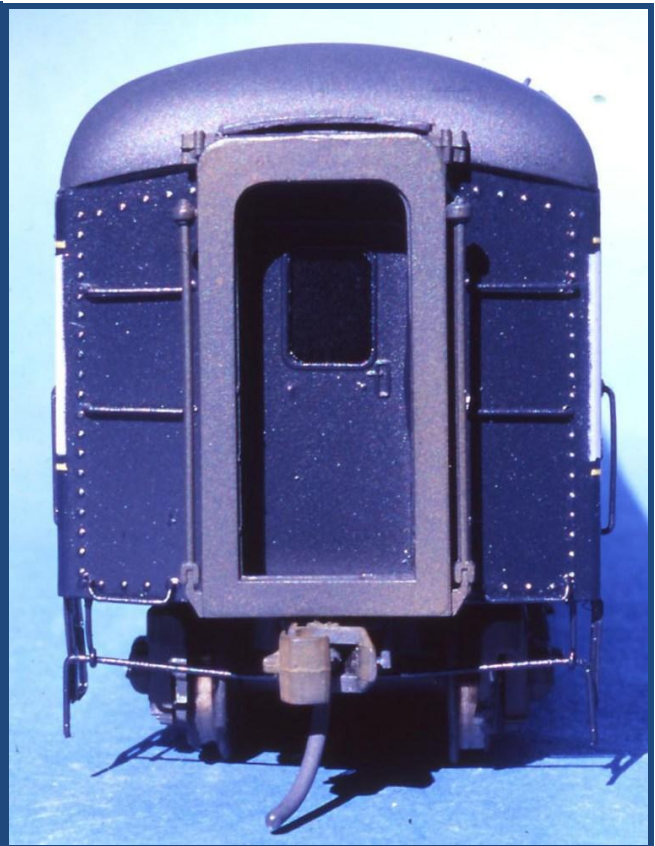
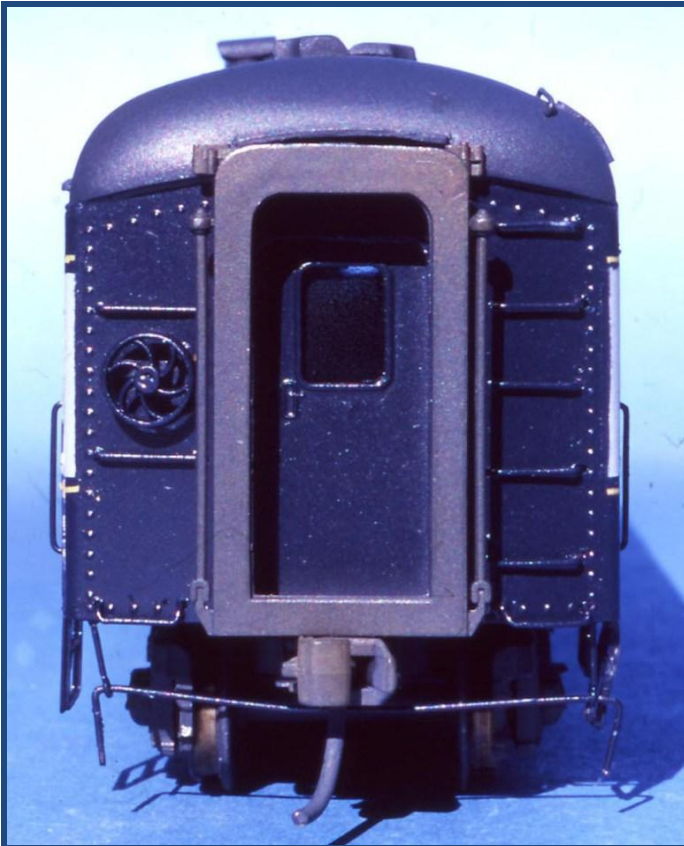


Install the doors. Install your favorite window material. Add a safety bar of .016" brass wire across the four aisle windows. I cut the window shades from

a gray file folder. The vents on the three kitchen windows are thinned Precision Scale #48274 washout plugs.



Completed model, kitchen side.



Completed kitchen end and dining room end.

Install remaining handrails; I used Detail Associates #6601 vestibule grabs, lengthened slightly to match the holes; paint them blue.

Inside the carbody, add a view block between the aisle and the kitchen cut from .020" styrene sheet. Add tables and chairs in the dining area if desired.

Install the floor, and secure it to the L-shaped framing with a few 0-80 x 3/16" screws. Install diaphragms, couplers, and trucks, and she is ready to roll!



## Bill of Materials

Note – Many of these parts are optional, depending on the degree to which the modeler follows NKP Car's instructions and the degree of detailing desired.

Manufacturer	Part Number	Description
NKP Car Company <a href="http://www.nkpcarco.com">http://www.nkpcarco.com</a>		B&O Class F4bn Modernized Heavyweight Diner - Round End - Arch Roof - Thermopane Windows - York A/C Components
Bethlehem Car Works <a href="http://www.bethlehemcarworks.com">http://www.bethlehemcarworks.com</a>	12	UC Brake Set
Detail Associates	229-2222 229-6601	Eyebolts, Long Grabs, Vestibule
Evergreen Scale Models <a href="http://www.evergreenscalemodels.com">http://www.evergreenscalemodels.com</a>	269-104 269-139 269-142 269-144 269-149 269-159 269-177 269-188  269-9020 269-9060	Styrene Strip, .010" x .080" Styrene Strip, .030" x .250" Styrene Strip, .040" x .040" Styrene Strip, .040" x .080" Styrene Strip, .040" x .250" Styrene Strip, .060" x .250" Styrene Strip, .100" x .156" Styrene Strip, .125" x .188" (1/8" x 3/16") Styrene Sheet, .020" Styrene Sheet, .060"
Precision Scale Co., Inc. <a href="http://pscl.virtualfocus.com/">http://pscl.virtualfocus.com/</a>	585-4868 585-4869 585-31118 585-48274	Wire, .012" Wire, .016" Brakewheel Washout Plugs
Trackside Specialties	193	Smokejack
Walthers <a href="http://www.walthers.com">http://www.walthers.com</a>	947-1012	Screw, 0-80 x 3/16"
Westerfield* <a href="http://www.westerfieldmodels.com">http://www.westerfieldmodels.com</a>	1183 1197 1198	Straight Grabs, 23" Drop Grabs, 18" Straight Grabs, 18"
Tichy Train Group* <a href="http://www.tichytraingroup.com">http://www.tichytraingroup.com</a>	293-3015 293-3021 293-3053	18" Drop Grabiron 18" Straight Grabiron 24" Straight Grabiron
Paint/Decals		See Text
Other		Gray File Folder

*\*[Ed: Westerfield is in the process of closing down operations due to retirement and no longer accepts orders for decals and detail parts. No orders for any merchandise will be accepted after March 31, 2011. Equivalent Tichy Train Group parts are provided.]*



F-4ce dining car. B&ORR Historical Society Collection.

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## NA TOWER, NOT YOUR NORMAL TOWER

BY JEFF HANKE

PHOTOS BY AUTHOR UNLESS OTHERWISE SPECIFIED.



### Introduction

At the turn of the 20<sup>th</sup> century the B&O put \$865 into building a “tower” at Martinsburg. The original 11x20 building still stands today; however, it had an extension added on the north side in 1950 and was later moved about 50 yards from its original position. The tower served the B&O, the Chessie System, and CSX as well. It was targeted for closure in 1987, but managed to remain in service until 2003. The building is boarded up and from last reportedly awaiting acquisition by the Martinsburg Roundhouse Authority for preservation.

This little “tower” is not really a tower in the traditional sense. It is just one story tall, has no

mechanical interlocking and was not built to any standard design. It is, however, one of seven towers along a short stretch of B&O mainline from Brunswick, MD, across northern West Virginia and back into Maryland at Cumberland. With Brunswick (WB) to the east and West Cumbo (W), Miller (R), Hancock (HO), Patterson Creek (FN) and Mexico (M) to the west, Martinsburg was surrounded by other towers. Its main purpose seems to have been controlling access to the Frog Hollow Industrial Track and controlling crossovers and access to several long passing sidings which made Martinsburg look like a yard.





Martinsburg Tower in 1973, wearing B&O cream paint, Bruce Elliott photograph.

Luckily, with easy access to the building, getting a detailed plan made of this structure is easy. I spent about 20 minutes measuring the building with a tape measure and taking notes. I then drew a detailed plan of each side and the floor plan. An example of my sketching appears below.

### Initial Assembly

Evergreen Novelty Siding (No. 4062) is an accurate material for modeling the siding on NA Tower. Novelty siding was popular at the turn of the 19<sup>th</sup> century and that is what was used on the real tower. The .060" spacing is very close to the real thing. The .040" thickness is easy to cut and rigid enough not to need internal bracing. I added an interior wall to my model, where the original structure and 1950 extension meet. This helped anchor the roof pieces, but was not needed for structural integrity in HO scale.

Cut each of the nine wall sections at one time. Refer to the sketches for dimensions. Each of the corners will be covered with trim eventually, but I still sand the joining edges to a 45 degree angle for a snug fit. I

used Northeast Scale Lumber 3/32" angle for the corner trim.

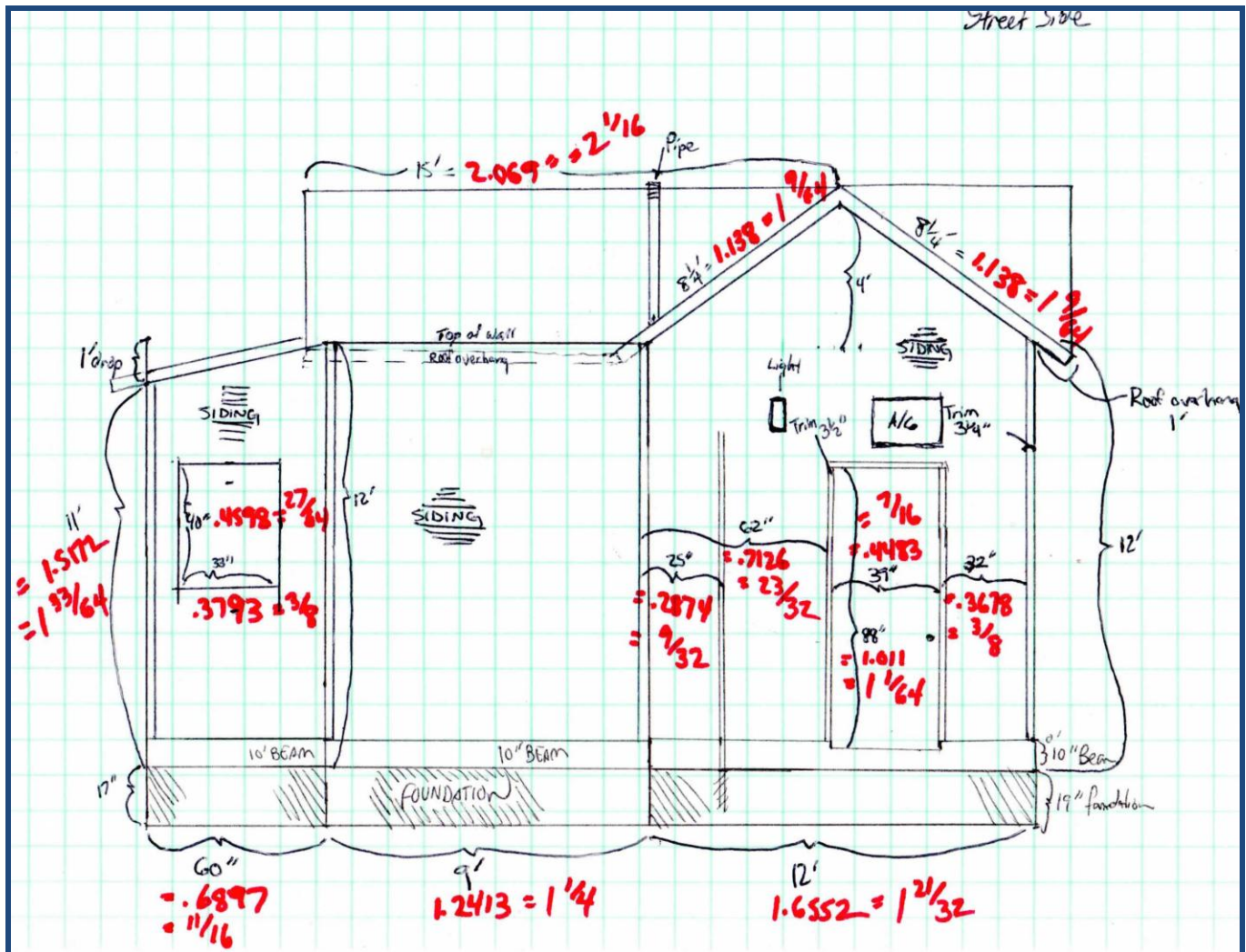
Next up is to cut in all the windows. There are six windows on the tower. I used Grandt Line Factory Windows (No. 5140). These windows are almost the perfect size, but have only four lights. The real windows had eight. I added two horizontal cross bars to each window from 1x2 scale plastic shapes. Carefully scribe the hole for each with a metal ruler and a very sharp X-acto blade. The hole does not have to be a perfect fit, but should not be so tight as to bend the cross bars in the windows. Glue in each window with cyanoacrylate (CA). Luckily, to cover any cutting flaws, each of these windows had sizable trim. Use Northeast Lumber scale 2x4 for the trim.

For the front door, the Grandt Line No. 5072 door is the correct size. It has just one flaw one could overlook. The panels in the bottom part of the door are vertical on the Grandt door. The real NA Tower had horizontal panels. I chose to graft in the bottom of a Tichy No. 8130 door to better represent the real front door.

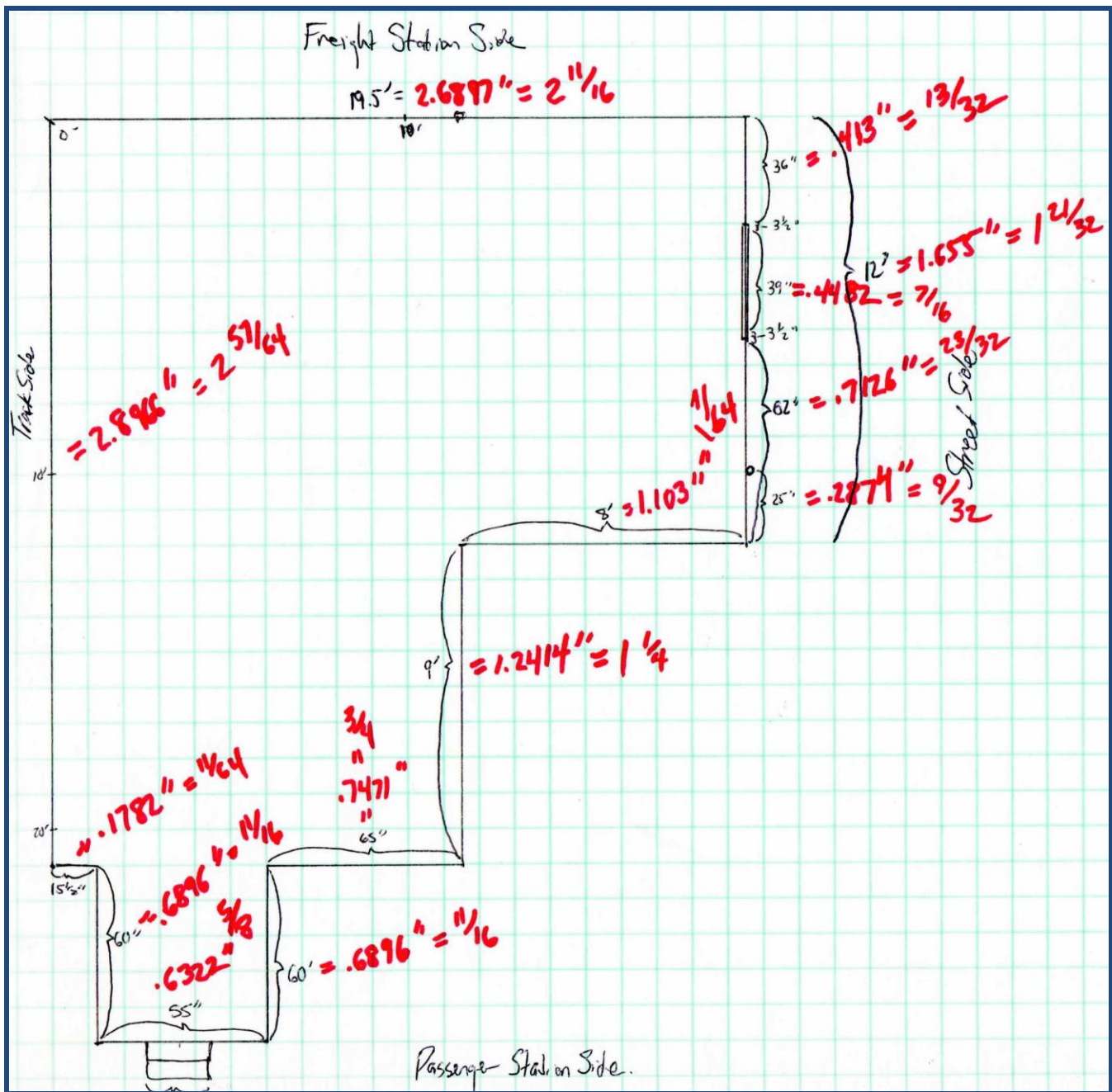
The 1950 extension had a solid door in one side. I used a Pikestuff No. 541-1102 personnel door for it.

There are also two small vents in the 1950 extension. I added them at this phase by drilling a hole in the siding and framing 2x4 scale lumber around it. I added a small flap of styrene to simulate the vent cover.

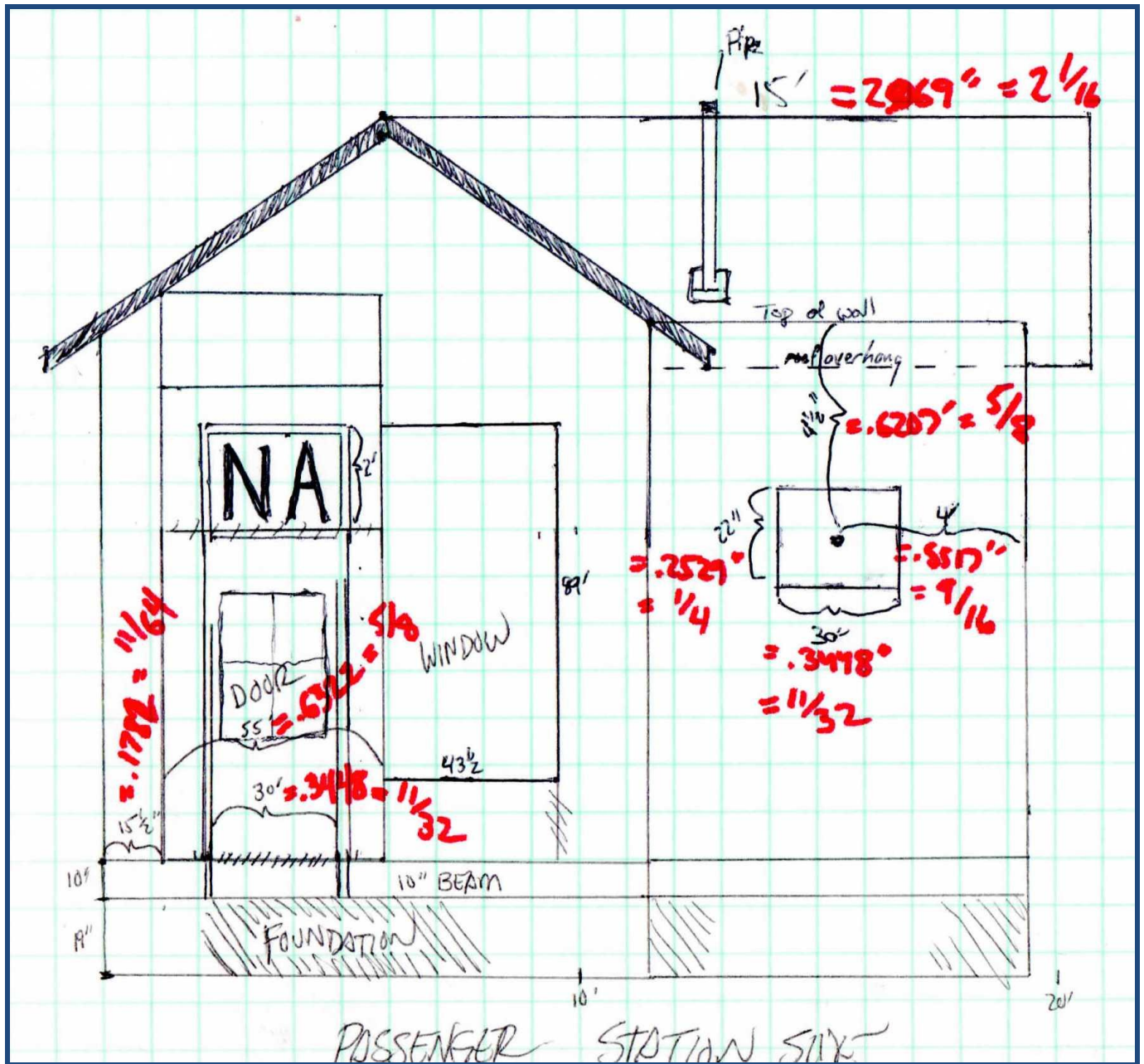
The vestibule had two side windows in it when originally built, but around 1974 they were filled in. Since I model 1982, I showed mine filled in. I simply used sheet styrene and 2x4 framing to depict these covered over windows.

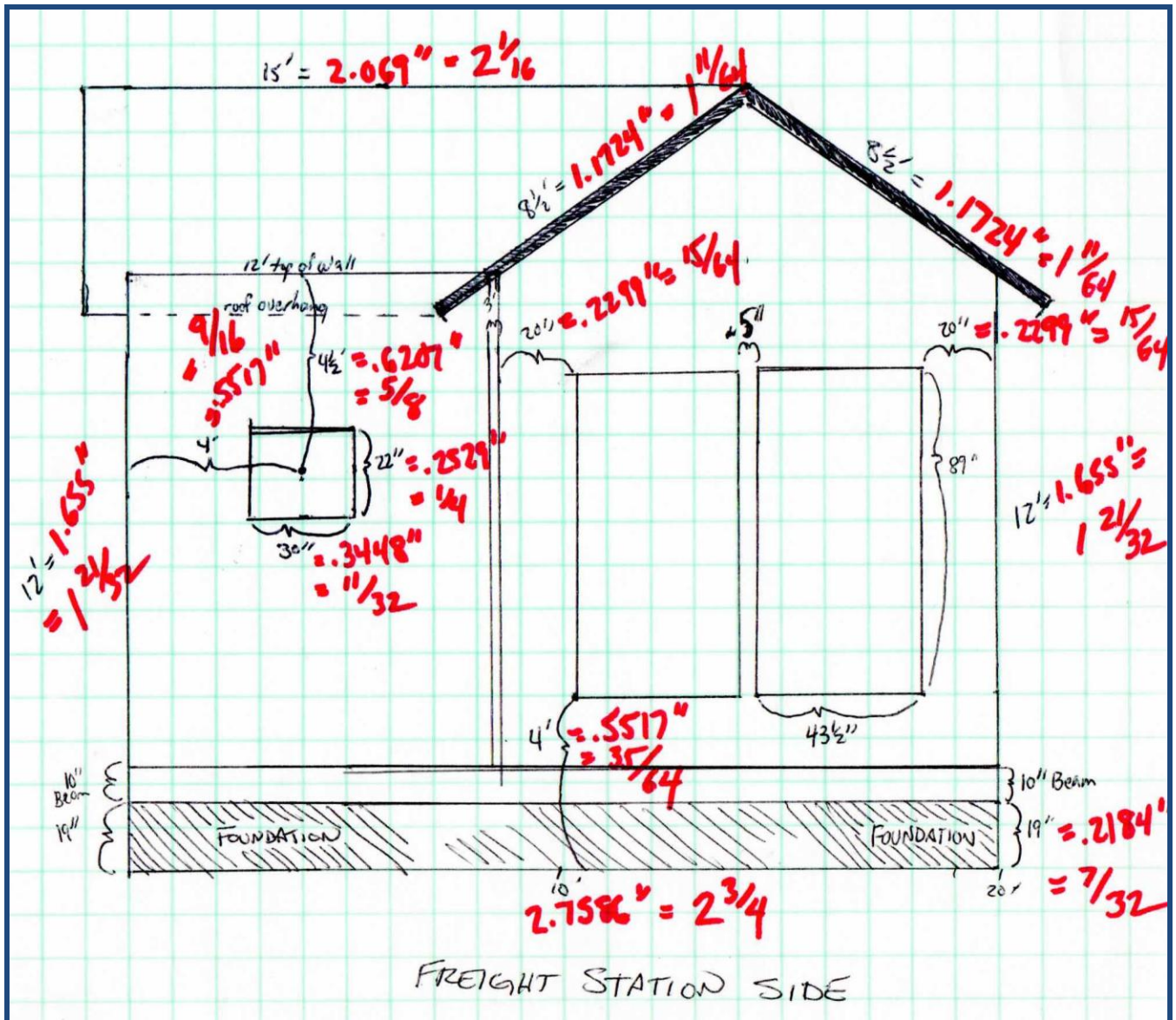




















While the building is easy to handle, I cut out the floor piece and add it. I also cut roof sections first with thin cardboard to get the shape right. I then use the cardboard as templates for sheet styrene replacements. Getting the joint between the 1950 extension and the original structure is the most challenging, so take your time. Finally, add the solid

panel on the back window for the air conditioner, the wire conduits for the flood lights, and other electrical wiring. I used 0.010" brass wire for conduit. I also added Pikestuff concrete stairs to the front and side entrances. They come with three steps each, but I cut the bottom step off to match the prototype.



### **Painting**

I wish someone made B&O structure cream, but since they don't, I mix it myself. I used Polly Scale aged concrete with white to lighten it up. I actually

Painted this building twice as the first time I added Tamiya Buff to the mix and the building looked too tan.



### **Detailing**

Adding the details really makes this project come alive. Start with painting and weathering the vestibule and 1950 extension foundations. I use Tamiya Deck Tan and weathering pastels. Do the steps, too.

The wood pieces can be lightly scraped with a dull blade to simulate flaking paint. Then apply a thin dark grey wash to the whole structure. This will

really bring out the details in the siding and windows. Also, it will highlight the flaked paint on the wood surfaces.

Use an eraser to scrub the siding. This will leave the wash in the grooves and give the siding a nice worn appearance. Seal the weathering with Testors Dullcote.





### Final Assembly

I added the clear styrene with Elmer's White Glue for the window glazing. After the dry glued, I added black and white NA placards on the front door and back window. I used Microsoft PowerPoint to find the correct font and size. Note that the upper quadrant of the window, where the NA placard is, has no vertical window divider. After attaching the placards, I glued on the roof. The roof needs to be painted black and have an order board added. I scratch built the order board from styrene and wood scraps.

Amazingly enough, for a structure this small there are two air conditioners to model. I added the one on the window and the other above the solid door, as seen on the prototype. I used California Freight and Detail Company No. 5290.

I added a "tar paper" roof with tissue paper. My technique is to cut the tissue paper into strips, paint the roof with black paint, put the tissue paper on top of it and then brush on a little more paint. The paint acts as the glue to keep the paper in place. When all pieces are in place, I weather it lightly. I then added the exhaust pipe to the 1950 extension roof. I just used scrap styrene rod, but brass tube would work well too. My final additions were a brass wire antenna and a flood light at the front door.

### Closing Thoughts

NA tower is not your normal tower, but through careful planning and picking the right commercially available doors, windows and siding, you can make one for yourself. *Editor's Note: This model earned a Merit Certificate at the 2010 NMRA National Convention in Milwaukee. Congratulations and great modeling Jeff.*

## Bill of Materials

Manufacturer	Part Number	Description
California Freight & Detail Company	5290	Window A/C
Evergreen Scale Models <a href="http://www.evergreenscalemodels.com">http://www.evergreenscalemodels.com</a>	269-4062 269-8102	Novelty Siding Styrene Strip, 1" x 2"
Floquil Polly S Color Corp. <a href="http://www.testors.com">http://www.testors.com</a>	270- 414320	Aged Concrete White
Grandt Line <a href="http://grandtline.com">http://grandtline.com</a>	300-5072 300-5140	Door -- 4-Pane Window w/Transom Windows -- Double-Hung, Four-Pane Factory 42" x 91"
Northeastern Scale Lumber <a href="http://www.northeasternscalelumber.com">http://www.northeasternscalelumber.com</a>	521-2012 521-2033 521-70503	Lumber – 2 x 4 x 24" Lumber – 4 x 10 x 22" Wood Angles - 22" Long Strips -- 3/32 x 3/32" pkg(5)
Pikestuff <a href="http://rixproducts.com">http://rixproducts.com</a>	541-1010 541-1102	Concrete Staircase Doors (White Styrene) -- Solid Entryway Type w/No Windows pkg(3)
Tichy Train Group* <a href="http://www.tichytraingroup.com">http://www.tichytraingroup.com</a>	293-1101 293-8130	.010 Phosphor Bronze Wire Residential Door/Transom
Other		Tissue Paper Window Glazing



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